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**From:** Libelo, Laurence [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DA33642E6438407DAF4C35AFE870046B-LIBELO, LAURENCE]  
**Sent:** 6/15/2017 4:40:45 PM  
**To:** Strynar, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5a9910d5b38e471497bd875fd329a20a-Strynar, Mark]; Mei Sun [msun8@uncc.edu]  
**CC:** Detlef Knappe [knappe@ncsu.edu]  
**Subject:** RE: [request] Would you please reach out to ORD this morning

GREAT! Thanks.

A couple of quick look questions –

Did Wellington have a GENX standard?

When were the grab samples?

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**From:** Strynar, Mark  
**Sent:** Thursday, June 15, 2017 12:02 PM  
**To:** Mei Sun <msun8@uncc.edu>  
**Cc:** Libelo, Laurence <Libelo.Laurence@epa.gov>; Detlef Knappe <knappe@ncsu.edu>  
**Subject:** RE: [request] Would you please reach out to ORD this morning

Thanks Mei,

Laurence do you need more?

Mark

**From:** Mei Sun [mailto:msun8@uncc.edu]  
**Sent:** Thursday, June 15, 2017 11:56 AM  
**To:** Strynar, Mark <Strynar.Mark@epa.gov>  
**Cc:** Libelo, Laurence <Libelo.Laurence@epa.gov>; Detlef Knappe <knappe@ncsu.edu>  
**Subject:** Re: [request] Would you please reach out to ORD this morning

This is what I can recall:

- Specificity of the analytical standard  
PFAC-MXA from Wellington Laboratory. 5 ug/mL stock solution in Methanol. Diluted into 10-750 ng/L in water.

- Sensitivity of the analytical method  
I don't think we have done a sensitivity test by strict definition. LOQ is 25 ng/L for PFDA and PFOS, 10 ng/L for the rest eight legacy compounds and GenX.

- Number of detects above and below the LOD/LOQ

GenX PFBA PFPeA PFHxA PFHpA PFOA PFNA PFDA PFBS PFHxS PFOS

Community A (n=127)	0	117	127	111	100	123	43	2	23	66	79
Community B (n=73)	1	45	65	34	32	28	0	0	1	6	5
Community C (n=34)	34	19	31	12	11	9	0	0	0	5	5

For the water treatment data we only have one sample at each point, so whatever shows in Figure 2 is a detect.

- Whether values in finished water represent direct measurements or calculated values (e.g., extrapolated from measurements at intake)

Direct measurements.

- Sample timing and replication

Daily compost samples:

Community A: 6/22/2013-11/19/2013.

Community B: 6/15/2013-12/2/2013

Community C: 6/14/2013-10/13/13

Grab samples (no replicates):

Water treatment plant: 8/18/2014

- Uncertainties

I don't think we have done an uncertainty test by strict definition, but we accept 20% analytical error for QC injections.

- Anything else that you think would be helpful for study interpretation

Mei Sun

Assistant Professor

Department of Civil and Environmental Engineering

University of North Carolina at Charlotte

Energy Production and Infrastructure Center 3163

9201 University City Blvd | Charlotte, NC 28223

Phone: 704-687-1723 | Fax: 704-687-0957

Website: <https://coefs.uncc.edu/msun8/>

On Thu, Jun 15, 2017 at 11:27 AM, Strynar, Mark <[Strynar.Mark@epa.gov](mailto:Strynar.Mark@epa.gov)> wrote:

My guess would be for any and all samples we collected and measured on the LC-MS/MS system.

Mark

**From:** Mei Sun [mailto:[msun8@uncc.edu](mailto:msun8@uncc.edu)]  
**Sent:** Thursday, June 15, 2017 11:25 AM  
**To:** Strynar, Mark <[Strynar.Mark@epa.gov](mailto:Strynar.Mark@epa.gov)>  
**Cc:** Libelo, Laurence <[Libelo.Laurence@epa.gov](mailto:Libelo.Laurence@epa.gov)>; Detlef Knappe <[knappe@ncsu.edu](mailto:knappe@ncsu.edu)>  
**Subject:** Re: [request] Would you please reach out to ORD this morning

Hi Mark

Do you know if the questions are for the raw water in all three communities, or in the water plant in Wilmington?

Mei Sun

Assistant Professor  
Department of Civil and Environmental Engineering  
University of North Carolina at Charlotte  
Energy Production and Infrastructure Center 3163  
9201 University City Blvd | Charlotte, NC 28223  
Phone: [704-687-1723](tel:704-687-1723) | Fax: [704-687-0957](tel:704-687-0957)

Website: <https://coefs.uncc.edu/msun8/>

On Thu, Jun 15, 2017 at 11:20 AM, Strynar, Mark <[Strynar.Mark@epa.gov](mailto:Strynar.Mark@epa.gov)> wrote:

I am trying to find out how best to do this. Mei Sun was a researcher working with Detlef Knappe (NCSU) back in 2013-2014 when we did this work. She is now a prof at UNC Charlotte. I may take me some time to dig up this info.

Detlef or Mei can we answer these questions?

Mark

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**From:** Libelo, Laurence  
**Sent:** Thursday, June 15, 2017 10:04 AM  
**To:** Strynar, Mark <[Strynar.Mark@epa.gov](mailto:Strynar.Mark@epa.gov)>  
**Subject:** FW: [request] Would you please reach out to ORD this morning  
**Importance:** High

Hi Mark,

Can you help with this?

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**From:** Aubee, Catherine  
**Sent:** Thursday, June 15, 2017 9:49 AM  
**To:** Libelo, Laurence <[Libelo.Laurence@epa.gov](mailto:Libelo.Laurence@epa.gov)>; Tobias, David <[Tobias.David@epa.gov](mailto:Tobias.David@epa.gov)>  
**Cc:** Eisenreich, Karen <[Eisenreich.Karen@epa.gov](mailto:Eisenreich.Karen@epa.gov)>  
**Subject:** [request] Would you please reach out to ORD this morning  
**Importance:** High

(if you have not already) and request anything they can provide additional info on methods and underlying data for the monitoring paper?

If possible, **by 2:30PM today**, please prepare some bullets on the following:

- Specificity of the analytical standard
- Sensitivity of the analytical method
- Number of detects above and below the LOD/LOQ
- Whether values in finished water represent direct measurements or calculated values (e.g., extrapolated from measurements at intake)

- Sample timing and replication
- Uncertainties
- Anything else that you think would be helpful for study interpretation

You may be able to determine much of this from the paper and any published supplemental materials. We should still pursue getting the actual data from ORD so we have a full understanding of the study.

I know you all have many competing priorities – so thanks for your continued help on this.

Best,

Catherine

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Catherine Aubee

Acting Branch Chief - OPPT/RAD/AB1

Email: [aubee.catherine@epa.gov](mailto:aubee.catherine@epa.gov)

Phone: [\(202\) 564-0631](tel:(202)564-0631)

Office: WJC East 6221A

By Mail:

U.S. Environmental Protection Agency

1200 Pennsylvania Ave NW

Mail Code: 7403M

Washington, DC 20460

